

1     CLAIMS

2

3     1.    A method of selecting a strain of lactic acid-  
4           utilising bacteria, which method comprises the  
5           steps of:

6

7               a) providing a bacterial culture from a human  
8               faecal sample;

9               b) selecting a single colony of bacteria;

10              c) growing said colony in a suitable medium  
11              containing lactic acid; and

12              d) selecting a strain of bacteria consuming  
13              relatively large amounts of lactic acid,

14

15              all of the above steps being conducted under  
16              anaerobic conditions.

17

18     2.    The method as claimed in Claim 1 wherein at  
19           least 10mM of lactic acid is consumed during  
20           growth into the stationary phase per 24 hours  
21           at 37°C in YCFALG or YCFAL medium.

22

23     3.    The method as claimed in either one of Claims 1  
24           and 2 wherein said method comprises the  
25           additional step of:

26

27               e) selecting a strain of bacteria producing  
28               relatively large quantities of butyric  
29               acid.

30

31     4.    The method as claimed in Claim 3 wherein at  
32           least 10mM butyric acid is produced during

- 1           bacterial growth into the stationary phase per  
2           24 hours at 37°C in YCFALG or YCFAL medium.  
3
- 4       5.    The method as claimed in any one of Claims 1 to  
5           4 wherein said lactic acid is a mixture of D  
6           and L isomers of lactic acid.  
7
- 8       6.    *Anaerostipes caccae* strain L1-92 deposited at  
9           NCIMB under No. 13801<sup>T</sup>.  
10
- 11      7.    *Clostridium indolis* bacterial strain Ss2/1  
12           deposited at NCIMB under No. 41156.  
13
- 14      8.    *Eubacterium hallii* strain SM 6/1 deposited at  
15           NCIMB under No. 41155.  
16
- 17      9.    A lactic acid utilising bacterium having a 16S  
18           rRNA gene sequence with at least 95% homology  
19           to one of the sequences shown in Fig. 1.  
20
- 21      10.   A bacterial strain as claimed in any one of  
22           Claims 6 to 9 for use as a medicament to treat  
23           lactic acid induced disorders or as a  
24           foodstuff.  
25
- 26      11.   A bacterial strain as claimed in Claim 10 for  
27           use as a medicament to treat lactic-acidosis,  
28           short bowel syndrome or inflammatory bowel  
29           disease.  
30
- 31      12.   A method to promote butyric acid formation in  
32           the intestine of a mammal, said method

1 comprising the administration of a  
2 therapeutically effective dose of at least one  
3 of the strains of bacteria as claimed in any  
4 one of Claims 6 to 9.

5

6 13. The method of Claim 12 wherein said bacteria is  
7 administered as a foodstuff or as a  
8 suppository.

9

10 14. A method for treating a disease associated with  
11 a high dosage of lactic acid, which method  
12 comprises the administration of a  
13 therapeutically effective dose of at least one  
14 strain of live lactic acid utilising bacteria  
15 as claimed in any one of Claims 6 to 9.

16

17 15. The method of Claim 14 wherein said disease is  
18 lactic-acidosis, short bowel syndrome or  
19 inflammatory bowel disease.

20

21 16. The method of either one of Claims 14 and 15  
22 wherein said bacteria is *Anaerostipes caccae*.

23

24 17. A prophylactic method to reduce the incidence  
25 or severity of colorectal cancer or colitis in  
26 mammals caused in part by high lactic acid and  
27 low butyric acid concentrations, which method  
28 comprises the administration of a  
29 therapeutically effective dose of at least one  
30 strain of live lactic acid utilising bacteria  
31 as claimed in any one of Claims 6 to 9.

32

- 1      18. The method of Claim 17 wherein said bacteria is  
2            *Anaerostipes caccae*.  
3
- 4      19. A probiotic composition comprising a live  
5            bacterial strain as claimed in any one of  
6            Claims 6 to 9, in combination with live lactic  
7            acid producing bacteria.  
8
- 9      20. The composition as claimed in Claim 19 wherein  
10           said lactate acid producing bacteria is  
11           *Lactobacillus spp*, *Bifidobacterium spp* or a  
12           mixture thereof.  
13
- 14     21. The method of either one of Claims 19 and 20  
15           wherein said bacteria is *Anaerostipes caccae*.  
16
- 17     22. The composition as claimed in any one of Claims  
18           19 to 21 further containing other additives or  
19           growth enhancing supplements.